

Amendments to the Specification:

Please replace paragraph [01] of the specification with the following rewritten paragraph:

[01] ~~The present invention~~ This application is a continuation-in-part application of United States Patent Application Serial Number 10/456,839 entitled "IMAGE DEGRADATION CORRECTION IN NOVEL LIQUID CRYSTAL DISPLAYS" filed on June 6, 2003, herein incorporated by reference in its entirety, and claims benefit of the priority date thereof.

Please replace paragraph [02] of the specification with the following rewritten paragraph:

[02] The present application is related to commonly owned United States Patent Applications: (1) United States Patent Application Serial No. 10/455,925 entitled "DISPLAY PANEL HAVING CROSSOVER CONNECTIONS EFFECTING DOT INVERSION", filed on June 6, 2003, and published as US Patent Application Publication 2004/0246213; (2) United States Patent Application Serial No. 10/455,931 entitled "SYSTEM AND METHOD OF PERFORMING DOT INVERSION WITH STANDARD DRIVERS AND BACKPLANE ON NOVEL DISPLAY PANEL LAYOUTS", filed on June 6, 2003, and published as US Patent Application Publication 2004/0246381; (3) United States Patent Application Serial No. 10/455,927 entitled "SYSTEM AND METHOD FOR COMPENSATING FOR VISUAL EFFECTS UPON PANELS HAVING FIXED PATTERN NOISE WITH REDUCED QUANTIZATION ERROR", filed on June 6, 2003, and published as US Patent Application Publication 2004/0246278; (4) United States Patent Application Serial No. 10/456,806 entitled "DOT INVERSION ON NOVEL DISPLAY PANEL LAYOUTS WITH EXTRA DRIVERS", filed on June 6, 2003, and published as US Patent Application Publication 2004/0246279; and (5) United States Patent Application Serial No. 10/456,838 entitled "LIQUID CRYSTAL DISPLAY BACKPLANE LAYOUTS AND ADDRESSING FOR NON-STANDARD SUBPIXEL

ARRANGEMENTS," and published as US Patent Application Publication 2004/0246404, which are hereby incorporated herein by reference in their entirety.

Please replace paragraph [03] of the specification with the following rewritten paragraph:

[03] In commonly owned United States Patent Applications: (1) United States Patent Application Serial No. 09/916,232 (the '232 application”), entitled “ARRANGEMENT OF COLOR PIXELS FOR FULL COLOR IMAGING DEVICES WITH SIMPLIFIED ADDRESSING,” filed July 25, 2001, and issued as US Patent 6,903,754 (“the '754 patent”); (2) United States Patent Application Serial No. 10/278,353 (the '353 application”), entitled “IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS FOR SUB-PIXEL RENDERING WITH INCREASED MODULATION TRANSFER FUNCTION RESPONSE,” filed October 22, 2002, and published as US Patent Application Publication 2003/0128225 (“the '225 application”); (3) United States Patent Application Serial No. 10/278,352 (the '352 application”), entitled “IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS FOR SUB-PIXEL RENDERING WITH SPLIT BLUE SUB-PIXELS,” filed October 22, 2002, and published as US Patent Application Publication 2003/0128179 (“the '179 application”); (4) United States Patent Application Serial No. 10/243,094 (the '094 application”), entitled “IMPROVED FOUR COLOR ARRANGEMENTS AND EMITTERS FOR SUB-PIXEL RENDERING,” filed September 13, 2002, and published as US Patent Application Publication 2004/0051724 (“the '724 application”); (5) United States Patent Application Serial No. 10/278,328 (the '328 application”), entitled “IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS WITH REDUCED BLUE LUMINANCE WELL VISIBILITY,” filed October 22, 2002, and published as US Patent Application Publication 2003/0117423 (“the '423 application”); (6) United States Patent Application Serial No. 10/278,393 (the '393 application”), entitled “COLOR

DISPLAY HAVING HORIZONTAL SUB-PIXEL ARRANGEMENTS AND LAYOUTS,” filed October 22, 2002, and published as US Patent Application Publication 2003/0090581 (“the ‘581 application”); (7) United States Patent Application Serial No. [[01]] 10/347,001 (~~the ‘001 application~~) entitled “IMPROVED SUB-PIXEL ARRANGEMENTS FOR STRIPED DISPLAYS AND METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING SAME,” filed January 16, 2003, and published as US Patent Application Publication 2004/0080479 (“the ‘479 application”); each of which is herein incorporated by reference in its entirety, novel sub-pixel arrangements are disclosed for improving the cost/performance curves for image display devices.

Please replace paragraph [04] of the specification with the following rewritten paragraph:

[04] These improvements are particularly pronounced when coupled with sub-pixel rendering (SPR) systems and methods further disclosed in those applications and in commonly owned United States Patent Applications: (1) United States Patent Application Serial No. 10/051,612 (~~the ‘612 application~~), entitled “CONVERSION OF RGB A SUB-PIXEL FORMAT DATA TO PENTILE MATRIX ANOTHER SUB-PIXEL DATA FORMAT,” filed January 16, 2002, and published as US Patent Application Publication 2003/0034992 (“the ‘992 application”); (2) United States Patent Application Serial No. 10/150,355 (~~the ‘355 application~~), entitled “METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING WITH GAMMA ADJUSTMENT,” filed May 17, 2002, and published as US Patent Application Publication 2003/0103058 (“the ‘058 application”); (3) United States Patent Application Serial No. 10/215,843 (~~the ‘843 application~~), entitled “METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING WITH ADAPTIVE FILTERING,” filed August 8, 2002, and published as US Patent Application Publication 2003/0085906 (“the ‘906 application”); (4) United States Patent Application Serial No. 10/379,767 entitled “SYSTEMS AND METHODS FOR TEMPORAL SUB-PIXEL RENDERING OF IMAGE DATA” filed March 4, 2003, and published as US Patent Application

Publication 2004/0196302 (“the ‘302 application”); (5) United States Patent Application Serial No. 10/379,765 entitled “SYSTEMS AND METHODS FOR MOTION ADAPTIVE FILTERING,” filed March 4, 2003, and published as US Patent Application Publication 2004/0174380 (“the ‘380 application”); (6) United States Patent Application Serial No. 10/379,766 entitled “SUB-PIXEL RENDERING SYSTEM AND METHOD FOR IMPROVED DISPLAY VIEWING ANGLES” filed March 4, 2003, and issued as US Patent 6,917,368 (“the ‘368 Patent”); (7) United States Patent Application Serial No. 10/409,413 entitled “IMAGE DATA SET WITH EMBEDDED PRE-SUBPIXEL RENDERED IMAGE” filed April 7, 2003, and published as US Patent Application Publication 2004/0196297 (“the ‘297 application”); which are hereby incorporated herein by reference in their entirety.

Please replace paragraph [017] of the specification with the following rewritten paragraph:

[017]**FIG. 2** shows a panel comprising a repeat subpixel grouping 202, as further described in the ‘353 the ‘225 application. As may be seen, repeat subpixel grouping 202 is an eight subpixel repeat group, comprising a checkerboard of red and blue subpixels with two columns of reduced-area green subpixels in between. If the standard 1x1 dot inversion scheme is applied to a panel comprising such a repeat grouping (as shown in FIG. 2), then it becomes apparent that the property described above for RGB striped panels (namely, that successive colored pixels in a row and/or column have different polarities) is now violated. This condition may cause a number of visual defects noticed on the panel – particularly when certain image patterns are displayed. This observation also occurs with other novel subpixel repeat grouping – for example, the subpixel repeat grouping in FIG. 1 of the ‘352 the ‘179 application – and other repeat groupings that are not an odd number of repeating subpixels across a row. Thus, as the traditional RGB striped panels have three such repeating subpixels in its repeat group (namely, R, G and B), these traditional panels do not necessarily violate the above noted conditions. However, the repeat grouping of FIG. 2 in the present application has four (i.e. an even

number) of subpixels in its repeat group across a row (e.g. R, G, B, and G). It will be appreciated that the embodiments described herein are equally applicable to all such even modulus repeat groupings.

Please replace paragraph [020] of the specification with the following rewritten paragraph:

[020] **FIG. 3** shows an even modulo pixel layout which utilizes 2x1 dot inversion. Vertical image degradation is eliminated since same color pixels subpixels alternate in polarity. Horizontal image degradation due to same-color pixels subpixels is reduced by changing the phase of the dot inversion periodically. Driver chips 301A through D provide data to the display; the driver outputs are driven +,-,+,-,... or -,+,-,+,... The phasing of the polarity is shown in **FIG. 4** for the first 4 lines of the display. For example, the first column of chip 301B has the phase -,-,+,-,...